

CLAIMS

What is claimed is:

1. A lead screw adjustment structure of a disc drive to adjust a lead screw, which is rotatably installed on a pickup deck and reciprocates a pickup, the lead screw adjustment structure comprising:

an incorporated elastic member installed on the pickup deck to apply an elastic force in an upward direction and an axial direction to one end portion of the lead screw; and

an adjustment screw, disposed above the elastic member, which adjusts the end portion of the lead screw up and down, when the adjustment screw is rotated.

2. The lead screw adjustment structure as claimed in claim 1, wherein the elastic member is installed on a lower surface of the pickup deck and the adjustment screw penetrates the pickup deck disposed above the elastic member.

3. The lead screw adjustment structure as claimed in claim 2, wherein the elastic member comprises:

a base portion fixed at a predetermined distance to the lower surface of the pickup deck;
a first pressing portion, connected to the base portion and extending from the base portion towards the lower surface of the pickup deck, to apply an elastic force in the upward direction to the end portion of the lead screw; and

a second pressing portion, extended from the first pressing portion, to apply an elastic force in the axial direction to the end portion of the lead screw.

4. The lead screw adjustment structure as claimed in claim 3, wherein the elastic member further comprises a leaf spring connecting the base portion and the first pressing portion.

5. The lead screw adjustment structure as claimed in claim 3, wherein the adjustment screw is disposed above the first pressing portion.

6. The lead screw adjustment structure as claimed in claim 4, further comprising a support member, supporting the leaf spring, is provided between the pickup deck and the leaf spring.

7. The lead screw adjustment structure as claimed in claim 6, wherein a first through hole, rotatably supporting the end portion of the lead screw, is formed at one end portion of the support member.

8. The lead screw adjustment structure as claimed in claim 7, wherein the end portion of the lead screw, passing through the first through hole, contacts the second pressing portion.

9. The lead screw adjustment structure as claimed in claim 6, wherein the adjustment screw contacts an upper surface of the support member after penetrating the pickup deck.

10. The lead screw adjustment structure as claimed in claim 7, further comprising a guide member, having a second through hole to guide upward and downward movements of the end portion of the lead screw, wherein the guide member is provided in front of the one end portion of the support member.

11. A lead screw adjustment structure of a disc drive, which reads and/or records information on a surface of a disc, comprising:

a lead screw having first and second ends, radially extending across the surface, to rotate in first and second directions;

a pickup, to move along an axial direction of the lead screw based on a translation of the rotational movement of the lead screw into a linear force, to record and/or reproduce information on the surface;

an elastic member, to apply elastic forces in radial and axial directions to one of the ends of the lead screw, to maintain a parallel relationship between the lead screw and the surface.

12. The lead screw adjustment structure according to claim 11, further comprising:
a spindle motor to rotate the disc; and

a pickup deck having an upper surface above which the disc rotates and a lower surface on which the pickup and the spindle motor are installed.

13. The lead screw adjustment structure according to claim 12, wherein the elastic member is installed on a lower surface of the pickup deck.

14. The lead screw adjustment structure according to claim 13, further comprising an adjustment screw to adjust the elastic member, wherein the adjustment screw penetrates the pickup deck and contact the elastic member from above the upper surface.

15. The lead screw adjustment structure according to claim 14, wherein the elastic member comprises:

a base portion fixed at a distance to the lower surface of the pickup deck;
a first pressing portion, connected to the base portion and extending from the base portion towards the lower surface of the pickup deck, to apply a radially elastic force on the lead screw; and

a second pressing portion, extended from the first pressing portion, to apply an axially elastic force on the lead screw.

16. The lead screw adjustment structure according to claim 15, wherein the elastic member further comprises a leaf spring connecting the base portion and the first pressing portion.

17. The lead screw adjustment structure according to claim 15, wherein the adjustment screw is located above the first pressing portion, to adjust the radially elastic force applied by the elastic member.

18. The lead screw adjustment structure according to claim 16, further comprising a support member, having an end which cooperates with the one end of the lead screw, to support the leaf spring, wherein the support member is between the pickup deck and the leaf spring.

19. The lead screw adjustment structure according to claim 18, further comprising a first through hole, to rotatably support the one end of the lead screw, formed at the end of the support member.

20. The lead screw adjustment structure according to claim 19, wherein the one end of the lead screw passes through the first through hole and contacts the second pressing portion.

21. The lead screw adjustment structure according to claim 18, wherein the support member comprises an upper surface which comes in contact with the adjustment screw after the adjustment screw penetrates the pickup deck.

22. The lead screw adjustment structure according to claim 19, further comprising a guide member, having a second through hole to guide upward and downward movements of the one end of the lead screw.

23. The lead screw adjustment structure according to claim 22, wherein the guide member is adjacent to the end of the support member.

24. An adjustable elastic member apparatus to adjust the attitude and location of a lead screw relative to a disc surface, while a pickup, attached to a deck, travels along the disc surface, the adjustable elastic member comprising:

a guide, through which an end of the lead screw extends, to guide vertical movement of the lead screw;

a support on an underside of the deck, having an abutting end, into which the end of the lead screw fits, and a supporting end which extends lower than the connection portion;

an adjustment screw to penetrate the deck and to contact an upper side of the support; and

an elastic member having a base fitted to the supporting end of the support, a first pressing portion coupled to the base portion, to exert a vertical elastic force on an underside of the support, and a second pressing portion to exert an axial elastic force on the end of the lead screw.

25. An elastic member apparatus to adjust the attitude and location of a lead screw relative to a disc surface, while a pickup, attached to a deck, travels along the disc surface, having a guide, through which an end of the lead screw extends, to guide vertical movement of the lead screw, and a support on an underside of the deck, having an abutting end, through which the end of the lead screw tightly extends, and a supporting end which extends lower than the connection portion, the elastic member comprising:

- an adjustment screw to penetrate the deck and to contact an upper side of the support;
- a base of an elastic member, fitted to the supporting end of the support;
- a first pressing portion coupled to the base portion, to exert a vertical elastic force on an underside of the support; and
- a second pressing portion to exert an axial elastic force on the end of the lead screw.